

CLAIMS:

1. An apparatus, comprising:
an automatic mixer circuit operable to produce a control signal usable to adjust respective gains of a plurality of audio channels based on an aggregate of input levels of respective audio signals of the audio channels; and
a compression circuit operable to reduce the gain of a given one of the audio channels when an input level of the audio signal of that audio channel exceeds a threshold, irrespective of whether the control signal of the automatic mixer would permit the gain to rise higher.
2. The apparatus of claim 1, further comprising a plurality of compression circuits, each operable to reduce the respective gain of a respective one of the audio channels when an input level of the respective audio signal of the respective audio channel exceeds a respective threshold, irrespective of whether the control signal of the automatic mixer would permit the respective gain to rise higher.
3. The apparatus of claim 1, wherein at least one of: the threshold is variable, and a user may adjust the threshold.
4. The apparatus of claim 1, further comprising:
a summing circuit operable to produce an error signal that is a difference of a signal indicative of the input a level of the audio signal of the given audio channel and the control signal from the automatic mixer circuit; and

a voltage controlled amplifier responsive to the error signal to reduce the gain of the given audio channel when the control signal has a greater magnitude than the signal indicative of the input level of the audio signal.

5. The apparatus of claim 4, further comprising at least one such summing circuit and at least one such voltage controlled amplifier in each of at least some of the audio channels, wherein each voltage controlled amplifier is responsive to a respective error signal to reduce a gain of the respective audio channel when the control signal has a greater magnitude than the signal indicative of the input level of the respective audio signal.

6. The apparatus of claim 1, further comprising:

a summing circuit operable to produce an error voltage that is an aggregate of a signal indicative of the input level of the audio signal of the given audio channel and a signal indicative of the threshold; and

a voltage controlled amplifier responsive to the error signal to reduce the gain of the given audio channel when a magnitude of the signal indicative of the input a level of the audio signal at least one of approaches and reaches a magnitude of the signal indicative of the threshold.

7. The apparatus of claim 6, further comprising at least one such summing circuit and at least one such voltage controlled amplifier in each of at least some of the audio channels, wherein each voltage controlled amplifier is responsive to a respective error signal to reduce a gain of the

respective audio channel when a magnitude of the signal indicative of the input level of the respective audio signal at least one of approaches and reaches a magnitude of the signal indicative of the respective threshold.

8. The apparatus of claim 1, wherein the automatic mixer produces the control signal such that it is usable to adjust each of the gains of the plurality of audio channels in proportion to a ratio of the input level of the audio signal of the given audio channel to the aggregate input level of the respective audio signals of the audio channels.

9. An apparatus, comprising:

an automatic mixer circuit operable to produce a control signal usable to adjust respective gains of a plurality of audio channels based on an aggregate of input levels of respective audio signals of the audio channels;

a respective first summing circuit for each audio channel operable to produce a first error signal that is a difference of a signal indicative of the input level of the audio signal of the respective audio channel and the control signal from the automatic mixer circuit;

a respective second summing circuit for each audio channel operable to produce a second error voltage that is an aggregate of the signal indicative of the input level of the audio signal of the respective audio channel and a signal indicative of a threshold level for the respective audio channel; and

a voltage controlled amplifier for each audio channel that is (i) responsive to the respective first error signal to reduce the gain of the respective audio channel when the control signal

has a greater magnitude than the signal indicative of the input level of the respective audio signal, and (ii) responsive to the respective second error signal to reduce the gain of the respective audio channel when a magnitude of the signal indicative of the input level of the audio signal of the respective audio channel at least one of approaches and reaches a magnitude of the signal indicative of the threshold level for the respective audio channel, irrespective of whether the control signal of the automatic mixer would permit the gain to rise higher.

10. A method, comprising:

automatically mixing a plurality of audio channels by adjusting respective gains of the audio channels using a control signal based on an aggregate of input levels of respective audio signals of the audio channels; and

reducing the gain of a given one of the audio channels when an input level of the audio signal of that audio channel exceeds a threshold, irrespective of whether the control signal would permit the gain to rise higher.

11. The method of claim 10, further comprising reducing the gain in each of at least some of the audio channels when an input level of the audio signal of the respective audio channels exceeds a respective threshold thereof, irrespective of whether the control signal would permit the gain to rise higher.

12. The method of claim 10, further comprising varying the threshold.

13. The method of claim 10, further comprising:

producing an error signal that is a difference of a signal indicative of the input a level of the audio signal of the given audio channel and the control signal; and

automatically responding to the error signal to reduce the gain of the given audio channel when the control signal has a greater magnitude than the signal indicative of the input level of the audio signal.

14. The method of claim 10, further comprising:

producing an error signal in each of at least some of the audio channels that is a difference of a signal indicative of the input a level of the audio signal of the respective audio channel and the control signal; and

automatically responding to the error signal in each of the at least some audio channels to reduce the gain of the respective audio channel when the control signal has a greater magnitude than the signal indicative of the input level of the respective audio signal.

15. The method of claim 10, further comprising:

producing an error voltage that is an aggregate of a signal indicative of the input level of the audio signal of the given audio channel and a signal indicative of the threshold; and

automatically responding to the error signal to reduce the gain of the given audio channel when a magnitude of the signal indicative of the input a level of the audio signal at least one of approaches and reaches a magnitude of the signal indicative of the threshold.

16. The method of claim 10, further comprising:

producing an error voltage in each audio channel that is an aggregate of a signal indicative of the input level of the audio signal of the respective audio channel and a signal indicative of the respective threshold thereof; and

automatically responding to the error signal in each audio channel to reduce the gain of the respective audio channel when a magnitude of the signal indicative of the input a level of the respective audio signal at least one of approaches and reaches a magnitude of the signal indicative of the respective threshold.

17. The method of claim 10, wherein the control signal is usable to adjust each of the gains of the plurality of audio channels in proportion to a ratio of the input level of the audio signal of the given audio channel to the aggregate input level of the respective audio signals of the audio channels.

18. A method, comprising:

automatically mixing a plurality of audio channels by adjusting respective gains of the audio channels using a control signal based on an aggregate of input levels of respective audio signals of the audio channels;

producing a first error signal in each of at least some of the audio channels that is a difference of a signal indicative of the input a level of the audio signal of the respective audio channel and the control signal;

producing a second error voltage in each of the at least some audio channels that is an aggregate of the signal indicative of the input level of the audio signal of the

respective audio channel and a signal indicative of a threshold level for the respective audio channel;

automatically responding to the respective first error signal to reduce the gain of the respective audio channel when the control signal has a greater magnitude than the signal indicative of the input level of the respective audio signal: and

automatically responding to the respective second error signal to reduce the gain of the respective audio channel when a magnitude of the signal indicative of the input level of the audio signal of the respective audio channel at least one of approaches and reaches a magnitude of the signal indicative of the threshold level for the respective audio channel, irrespective of whether the control signal of the automatic mixer would permit the gain to rise higher.